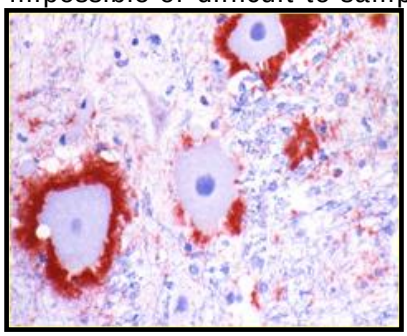
COLORADO DEPARTMENT OF AGRICULTURE

Inside Ag
January 2, 2008

Pilot Program Focuses on Early Detection

The Science

Chronic Wasting Disease (CWD) is a progressive, fatal disease of both wild and captive cervids (deer, elk and moose) caused by an abnormally shaped protein, called a prion. CWD is diagnosed post-mortem by detecting prion protein in a part of the brainstem, called the obex, and also in lymph nodes. These tissues are impossible or difficult to sample in a live animal.



Recently, researchers in Colorado have been looking at a way to screen live animals for the disease. They have found that prion protein accumulates in lymphoid tissue in the terminal part of the large intestine (rectum) in animals affected with CWD. They believe that the prion accumulation in this lymphoid tissue occurs relatively early in the course of disease, before the onset of clinical signs.

The rectal lymphoid tissue is relatively easily sampled (i.e. biopsied) in non-sedated animals as they are worked through a chute. Since the CWD prion is highly infectious between animals and persists in the environment for an unknown length of time, this discovery is important to be able to sample and test animals within a herd and to remove positive animals as soon as possible. This would minimize the likelihood of transmission of the disease directly to other animals in the herd as well as minimize the amount of prion that will be shed into the environment, which could serve as another route of disease transmission in the herd.

It is important to note that while the rectal biopsy screening can be used as a live animal screening test, it is not an approved test for animal movement or herd certification purposes since a negative finding on rectal biopsy screening does not guarantee that the animal is CWD-negative.

In Your Own Backyard

CWD has been found in farmed and wild animals in 14 states and 2 Canadian provinces over the last 10 years. In some instances CWD is present in both wild and farmed populations, but in some cases it is present only in wildlife or only in farmed animals.

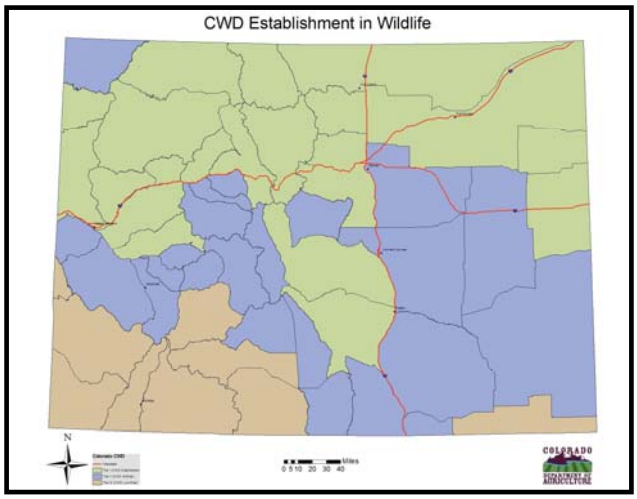
In Colorado, CWD has been detected in both wildlife and alternative livestock (farmed cervids). When CWD is detected in a positive or exposed

farmed cervid herd, depopulation has been the preferred option for eliminating the disease. In 2002, the United States Department of Agriculture (USDA) depopulated 31 Colorado and Nebraska farmed elk herds located in areas in those states where CWD was established in the cervid wildlife population. USDA depopulated these herds at the request of the involved States and their producers because of the risk of disease exposure in the farmed herds to CWD infected wildlife. Around 2500 elk were euthanized and tested for CWD resulting in a diagnosis of 5 CWD-positive animals in three herds.

At that time, the CWD "endemic" area in Colorado spanned the northeast part of the state, in the area including Larimer county and east along Interstate 76. In 2004, the USDA published a federal memo (VS Memo 574.2) that describes the process for defining areas where CWD is established in wildlife in order to identify farmed cervid herds located in these areas that may be considered for purchase and depopulation because of their increased risk of infection from surrounding wildlife.

The Pilot Project

In 2007, the Colorado Department of Agriculture (CDA) and the Colorado Division of Wildlife re-defined Colorado's "endemic" area (the green shaded area on the map), which now spans most of the northern part of the state. The Colorado Department of Agriculture would like to provide options to its alternative livestock producers located in this area beyond those offered in VS Memo 574.2.



The State would like to avoid killing such large numbers of animals to detect a very few positive animals and herds as was done in 2002. CDA and USDA have cooperatively written a pilot project that offers an alternative approach, allowing alternative livestock producers to utilize the rectal biopsy screening process to aid in their decision making regarding depopulation versus herd management options.

The pilot project will also provide some options to minimize as much as possible wastage of meat for producers that may choose depopulation of their herd as an option. The pilot project will be offered to the alternative livestock facilities that are located in the newly defined CWD "endemic" area. CDA and USDA hope the producers will take advantage of the rectal biopsy screening process and see it as a useful management tool for their herds.